

## **Abstract**

The invention relates to the field of fiber optics, and more particularly to birefringence in single-mode fibers. The sensitivity of a fiber optic sensor coil for a current sensor may be increased by winding the sensing fiber, without torsion, around a current-carrying wire to form the coil, wherein the pitch angle of the fiber may be selected to result in a phase shift due to Berry's phase of circularly polarized light propagating through the fiber. Preferably, the pitch angle may be approximately 60°.